

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Mathai Mammen et al.

Title: THERAPEUTIC CARBAMATES

Docket No.: 1343.011US1

Filed: December 7, 2000

Examiner: ~~Unknown~~ **RAY CAVINGTON**  
**308-4704**

Serial No.: 09/732,241

Due Date: June 7, 2001

Group Art Unit: 1614

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12/13/2000

**VIA HAND DELIVERY**

Commissioner for Patents


Washington, D.C. 20231

We are transmitting herewith the following attached items (as indicated with an "X"):

- ☒ A return postcard.
- ☒ An Information Disclosure Statement (1 p.), Form 1449 (3 p.), and copies of 36 cited references.
- ☒ PCT Search Report (9 p.).

Please consider this a **PETITION FOR EXTENSION OF TIME** for sufficient number of months to enter these papers and please charge any additional required fees or credit overpayment to Deposit Account No. 19-0743.

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
P.O. Box 2938, Minneapolis, MN 55402 (612-373-6900)

By:   
Atty: Robert J. Harris, Ph.D.  
Reg. No. 37,346

**VIA HAND DELIVERY**

**Customer Number 21186**

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(GENERAL)

S/N 09/732,241

PATENT

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Title: THERAPEUTIC CARBAMATES

INFORMATION DISCLOSURE STATEMENT

**VIA HAND DELIVERY**

Assistant Commissioner for Patents  
Washington, D.C. 20231

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq.*, the enclosed materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application.

Applicants are submitting herewith PCT patent 95/06635 which is in Japanese and is accompanied by an English abstract. Applicants submit that the English abstract, attached to the front of the PCT patent, is a concise explanation of the relevancy of said patent as it is presently understood and as required under 37 C.F.R. 1.98(a)(3). Accordingly, the Examiner is respectfully requested to acknowledge consideration of the PCT document and English abstract. For the Examiner's convenience, PCT 95/06635 has been listed on the enclosed Form 1449 and a duplicate copy of the patent and the English abstract are enclosed herewith.

Applicants respectfully request that this Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicants further request that a copy of the 1449 form, initialled by the Examiner to indicate that all listed citations have been considered, be returned with the next official communication.

Under 37 C.F.R. §1.97(b)(3), it is believed that no fee or certificate is required with this Information Disclosure Statement. However, if an Office Action on the merits has been mailed, the Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Account No. 19-0743.

The Examiner is invited to contact the Applicants' Representatives at the below-listed telephone number if there are any questions regarding this communication.

Respectfully submitted,

MATHAI MAMMEN ET AL.

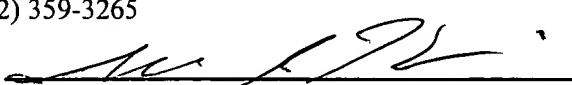
By their Representatives,

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Date

6-8-01

By

  
Robert J. Harris, Ph.D.  
Reg. No. 37,346

Form 1449*	Atty. Docket No.: 1343.011US1	Serial No. 09/732,241
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)	Applicant: Mathai Mammen et al.	
	Filing Date: December 7, 2000	Group: <u>1614/628</u>

## U. S. PATENT DOCUMENTS

**Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
<u>B</u>	4,567,178	01/28/1986	Eberlein et al.	514	215	01/07/85
<u>B</u>	4,587,046	05/06/1986	Goodman et al.	530	330	05/18/82
<u>B</u>	4,675,326	06/23/1987	Amitai et al.	514	304	05/08/85
<u>H</u>	5,691,323	11/25/1997	Thompson et al.	514	94	05/12/95

## FOREIGN PATENT DOCUMENTS

**Examiner Initial	Document Number	Date	Country	Class	Subclass	Translation Yes No
<u>B</u>	0419397	03/27/1991	European	C07D	451/04	
<u>B</u>	0747355	12/11/1996	European	C07D	211/46	
<u>B</u>	0863141	09/09/1998	European	C07D	401/06	
<u>B</u>	0930298	07/21/1999	European	C07D	211/46	
<u>B</u>	93/20071	10/14/1993	PCT	C07D	413/12	
<u>B</u>	95/06635	03/09/1995	PCT	C07D	207/14	X
<u>B</u>	98/03632	01/29/1998	PCT	C12N	5/00	
<u>B</u>	99/31086	06/24/1999	PCT	C07D	401/12	

## OTHER DOCUMENTS

(Including Author, Title, Date, Pertinent Pages, Etc.)

**Examiner Initial	
<u>B</u>	Barlow, R.B., et al., "A further search for selective antagonists at M2-muscarinic receptors", <u>Br. J. Pharmac.</u> , 89, pp. 837-843, (1986)
<u>B</u>	Bonner, T.I., et al., "Identification of a Family of Muscarinic Acetylcholine Receptor Genes", <u>Science</u> , 237, pp. 527-532, (July 31, 1987)
<u>B</u>	Carrithers, M.D., et al., "Synthesis and characterization of bivalent peptide ligands targeted to G-protein-coupled receptors", <u>Chemistry &amp; Biology</u> , 3 (7), pp. 537-542, (1996)
<u>B</u>	Eglen, R.M., et al., "Muscarinic Receptor Subtypes: Pharmacology and Therapeutic Potential", <u>DN&amp;P</u> , 10(8), pp. 462-469, (Oct. 1997)
<u>B</u>	Fisher, A., "Muscarinic agonists for the treatment of Alzheimer's disease: progress and perspectives", <u>Exp. Opin. Invest. Drugs</u> , 6 (10), Investigational Drugs -- Review: Central & Peripheral Nervous Systems, pp. 1395-1411, (1997)
<u>B</u>	Goyal, R.K., "Muscarinic Receptor Subtypes: Physiology and Clinical Implications", <u>The New England Journal of Medicine</u> , 321 (15), pp. 1022-1029, (Oct. 12, 1989)

Examiner <u>Raymond Conley</u>	Date Considered <u>9/1/9</u>
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\*Substitute Disclosure Statement Form (PFO-1449)

\*\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form 1449*	Atty. Docket No.: 1343.011US1	Serial No. 09/732,241
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)	Applicant: Mathai Mammen et al.	
	Filing Date: December 7, 2000	Group: <del>1614</del> 1625

## OTHER DOCUMENTS

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(Including Author, Title, Date, Pertinent Pages, Etc.)

<i>J</i>	Graul, A., et al., "Darifenacin -- Agent for Irritable Bowel Syndrome Agent for Urinary Incontinence Muscarinic M3 Antagonist", <u>Drugs of the Future</u> , 21 (11), pp. 1105-1108, (1996)
<i>h</i>	Graul, A., et al., "Tolterodine -- Agent for Urinary Incontinence Muscarinic Receptor Antagonist", <u>Drugs of the Future</u> , 22 (7), pp. 733-737, (1997)
<i>ky</i>	Hulme, E.C., et al., "Muscarinic Receptor Subtypes", <u>Annu. Rev. Pharmacol. Toxicol.</u> , 30, pp. 633-673, (1990)
<i>ke</i>	Ishihara, Y., et al., "Central Cholinergic Agents. III. Synthesis of 2-Alkoxy-2,8-diazaspiro[4,5]decane-1,3-diones as Muscarinic Agonists", <u>Chem. Pharm. Bull.</u> , 40 (5), pp. 1177-1185, (1992)
<i>h</i>	Jakubik, J., et al., "Positive Cooperativity of Acetylcholine and Other Agonists with Allosteric Ligands on Muscarinic Acetylcholine Receptors", <u>Molecular Pharmacology</u> , 52, pp. 172-179, (1997)
<i>ke</i>	Kostenis, E., et al., "Evidence for a multiple binding mode of bispyridinium-type allosteric modulators of muscarinic receptors", <u>European Journal of Pharmacology</u> , 314, pp. 385-392, (1996)
<i>R</i>	Kostenis, E., et al., "Side Chain Variations in Bispyridinium-Type Allosteric Modulators of M2-Cholinoceptors", <u>Life Sciences</u> , 56 (11/12), Abstract No. 13, p. 1009, (1995)
<i>ke</i>	LeBoulluec, K.L., et al., "Bivalent Indoles Exhibiting Serotonergic Binding Affinity", <u>Bioorganic &amp; Medicinal Chemistry Letters</u> , 5 (2), pp. 123-126, (1995)
<i>h</i>	Martel, A.M., et al., "Revatropate -- Bronchodilator Muscarinic M3 Antagonist", <u>Drugs of the Future</u> , 22 (2), pp. 135-137, (1997)
<i>ke</i>	Melchiorre, C., et al., "Antimuscarinic action of methoctramine, a new cardioselective M-2 muscarinic receptor antagonist, alone and in combination with atropine and gallamine", <u>European Journal of Pharmacology</u> , 144, pp. 117-124, (1987)
<i>ke</i>	Melchiorre, C., et al., "Polymethylene tetraamines ad muscarinic receptor probes", <u>TIPS, Supplement</u> , pp. 55-59, (Dec. 1989)

Examiner

*Raymond Conley*

Date Considered

*9/9/01*

\*Substitute Disclosure Statement Form (PTO-1449)

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Form 1449*	Atty. Docket No.: 1343.011US1	Serial No. 09/732,241
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)	Applicant: Mathai Mammen et al.	
	Filing Date: December 7, 2000	Group: 1614/1820

## OTHER DOCUMENTS

\*\*Examiner  
Initial

(Including Author, Title, Date, Pertinent Pages, Etc.)

<i>h</i>	Melchiorre, C., et al., "The Design of Novel Methoctramine-Related Tetraamines as Muscarinic Receptor Subtype Selective Antagonists", <u>Life Sciences</u> , 56 (11/12), pp. 837-844, (1995)
<i>h</i>	Moser, U., et al., "Aliphatic and Hererocyclic Analogues of Arecaidine Propargyl Ester", <u>Arzneim-Forsch./Drug Res.</u> , 45 (I) Nbr. 4, pp. 449-455, (1995)
<i>h</i>	Piergentili, A., et al., "Synthesis and Muscarinic Receptors Affinity of a Series of Antagonist Bivalent Ligands", <u>IL Farmaco</u> , 49 (2), pp. 83-87, (1994)
<i>h</i>	Portoghese, P.S., "The Role of Concepts in Structure--Activity Relationships Studies of Opioid Ligands", <u>Journal of Medicinal Chemistry</u> , 35 (11), pp. 1927-1937, (1992)
<i>h</i>	Shuker, S.B., et al., "Discovering High-Affinity Ligands for Proteins: SAR by NMR", <u>Science</u> , 274, pp. 1531-1533, (Nov. 29, 1996)
<i>h</i>	Sowell, Sr., J.W., et al., "Synthesis and Cholinergic Properties of Bis[[dimethylamino)methyl]furanyl] Analogues of Ranitidine", <u>J. Med. Chem.</u> , 35, pp. 1102-1108, (1992)
<i>h</i>	Watson, N., et al., "Actions of methoctramine, a muscarinic M2 receptor antagonist, on muscarinic and nicotinic cholinceptors in guinea-pig airways in vivo and in vitro", <u>Br. J. Pharmacology</u> , 105, pp. 107-112, (1992)

Examiner <i>Raymond C. Costa</i>	Date Considered <i>7/7/01</i>
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